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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,041	07/31/2003	Andreas Nowatzky	200209709-2	4707

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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2677

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,041

Applicant(s)

NOWATZYK, ANDREAS

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 12-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 23, 24, 26-28 and 30 is/are rejected.
- 7) ☒ Claim(s) 4-11, 25 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Election of Species

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Figs. 1-3	constitute Species 1
Figs. 4-5	constitute Species 2
Fig. 6	constitute Species 3

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

On 09.26.05 Attorney Richard P. Lange elected Species 1 (Claims 1-11, 23-30) without traverse.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 27-28, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent No. 5,537,251) in view of Sokol (US Patent No. 4,689,604).

As to claim 1, Shimada teaches a surround-vision display system (See Col. 1, Lines 6-7) comprising:

- a carrier structure having an internal circumferential surface (See Fig. 31, item 23B);

- an observer located at least partly within a volume defined by the internal surface of the carrier structure (See Fig. 31, item 23B, Col. 7, lines 37-46).

Shimada does not disclose a motor unit for effecting continuous movement of the carrier structure with respect to observer and

- a plurality of light emitting source disposed as a two-dimensional array on the surface of the carrier structure; and

- a driver unit for the plurality of light emitting sources for driving each light emitting source depending on its vertical location and its temporary horizontal location.

Sokol teaches a motor unit for effecting continuous movement of the carrier structure with respect to observer (See Fig. 2, item 5) and

- a plurality of light emitting source disposed as a two-dimensional array on the surface of the carrier structure (See Fig. 2, items 6-8, Col. 5, Lines 1-49); and

- a driver unit for the plurality of light emitting sources for driving each light emitting source depending on its vertical location and its temporary horizontal location (See Fig. 2, items 6-8, Fig. 4, item 10, Col. 5, Lines 19-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Sokol into Shimada system in order to produce a streaking display resolution (See Col. 4, Lines 13-18 in the Sokol reference).

As to claim 27, Shimada teaches a method of surround-vision display with a very high visual dynamic range (See Col. 1, Lines 6-7) comprising:

distributing a limited number of images on the inside of a drum the spinning that image around a user (See Fig. 31, item 23B);

wherein though an images are moving, projected image appears to be relatively stationary (See Fig. 31, item 23B, Col. 7, lines 37-46).

Shimada does not disclose

a plurality of light emitting source disposed as a two-dimensional array on the surface of the carrier structure; and

wherein, pixel information for each horizontal position in space is sent to each correspondent LED that visits that position.

Sokol teaches

a plurality of light emitting source disposed as a two-dimensional array on the surface of the carrier structure (See Fig. 2, items 6-8, Col. 5, Lines 1-49); and

wherein, pixel information for each horizontal position in space is sent to each correspondent LED that visits that position (See Fig. 2, items 6-8, Fig. 4, item 10, Col. 5, Lines 19-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Sokol into Shimada system in order to produce a streaking display resolution (See Col. 4, Lines 13-18 in the Sokol reference).

As to claim 28, Sokol teaches the step of distributing is such that the LED'S are arranged in a grid on a panel tile, and the panel tile is tilted slightly so each panel tile presents a continuous vertical stripe in a picture frame as all its LED'S are swept by in the drum motion (See Fig. 2, items 6-8, Col. 5, Lines 1-49).

As to claim 30, Sokol teaches the step of distributing is such that an entire inside circumference of a drum is populated with LED panel tiles to keep frame refresh rates up to avoid flicker while keeping drum rotation speeds down to reasonable levels. (See Fig. 2, item 5, Col. 14, Lines 35-47).

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Sokol and Rast (Pub.: US 2004/0260470 A1).

As to claim 23, Shimada teaches a surround-vision display system (See Col. 1, Lines 6-7) comprising:

a drum with inside surface viewable by a user (See Fig. 31, item 23B, Col. 7, lines 37-46).

Shimada does not disclose

a plurality of LED'S arranged on said inside surface that together rotate in a vertical stack of horizontal circular orbits around said user;

a picture-frame pixel distributor connected to supply pixel information

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to a corresponding one of the plurality of LED'S according to its position in said vertical stack and its instantaneous position in its flight in its horizontal circular orbit around said user; and

a pulse-width modulator connected to a corresponding one of the plurality of LED'S and providing for modulated light intensity levels and minimal color shifts otherwise dependent on LED current levels;

wherein, when the LED'S and drum are moving, the image projected nevertheless appear to be stationary and a higher apparent resolution results from a limited number of LED's involved.

Sokol teaches a plurality of light emitting source arranged on a surface that together rotate in a vertical stack of horizontal circular orbits (See Fig. 2, items 6-8, Col. 5, Lines 1-49); and

a picture-frame pixel distributor connected to supply pixel information to a corresponding one of the plurality of LED'S according to its position in said vertical stack and its instantaneous position in its flight in its horizontal circular orbit, wherein, when the LED'S and drum are moving, the image projected nevertheless appear to be stationary and a higher apparent resolution results from a limited number of LED's involved (See Fig. 2, items 6-8, Fig. 4, item 10, Col. 5, Lines 19-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Sokol into Shimada system in order to produce a streaking display resolution (See Col. 4, Lines 13-18 in the Sokol reference).

Sokol and Shimada do not disclose a pulse-width modulator connected to a corresponding one of the plurality of LED'S and providing for modulated light intensity levels and minimal color shifts otherwise dependent on LED current levels.

Rast teaches a pulse-width modulator connected to a corresponding one of the plurality of LED'S and providing for modulated light intensity levels and minimal color shifts otherwise dependent on LED current levels (See Fig. 14, item 674, paragraph 0254).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Rast into Sokol and Shimada system in order to control LEDs.

4. Claims 2-3, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada and Sokol as applied to claims 1,2 above, and further in view of Ryan (Pub.: US 2004/0004844 A1).

As to claim 24, Shimada and Sokol do not disclose the two-dimensional array of light emitting sources being tilted with respect to a vertical line across the internal surface and covers substantially the entire internal surface.

Ryan teaches the two-dimensional array of light emitting sources being tilted with respect to a vertical line across the internal surface and covers substantially the entire internal surface (See Fig. 8, items 90, 92, 94, 96, paragraph 0036).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Ryan into Sokol and Shimada system in order to

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present mounting assembly with down ward tilted front surface (See paragraph 0004 in the Ryan reference).

As to claims 2-3, Shimada and Sokol do not disclose plurality of LEDs are distributed amongst a plurality of panel tiles that populate inside surface viewable by a user.

Ryan teaches plurality of LEDs are distributed amongst a plurality of panel tiles that populate inside surface viewable by a user (See Fig. 8, items 90, 92, 94, 96, paragraph 0036).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Ryan into Sokol and Shimada system in order to present mounting assembly with down ward tilted front surface (See paragraph 0004 in the Ryan reference).

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada and Sokol as applied to claims 1,2 above, and further in view of Greenberg (US Patent No. 6,798,570 B1).

Shimada and Sokol do not disclose an aperture mask with a corresponding aperture hole for each of the plurality of LED's and providing for a point light source smaller than that that would be observed by an unmasked LED.

Greenberg teaches an aperture mask with a corresponding aperture hole for each of the plurality of LED's and providing for a point light source smaller than that that

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would be observed by an unmasked LED (See Fig. 24, items 179-180, Col. 12, Lines 37-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Greenberg into Sokol and Shimada system in order to provide smaller light source.

Allowable Subject Matter

6. Claims 4-11, 25, 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claim 4 the major difference between the teaching of the prior art of record (Shimada and Sokol) and the instant invention the two-dimensional array of light emitting sources comprises a plurality of panel tiles, each panel tile mounted on a portion of the internal surface and having a two-dimensional sub-array of light emitting light sources mounted on its surface facing away from the internal surface of the carrier structure.

Claims 5-11 are dependent on claim 4.

Relative to claim 25 the major difference between the teaching of the prior art of record (Shimada and Sokol) and the instant invention the plurality of LED'S are arranged on said panel tiles in a grid set with its rows on an angle with respect to said

horizontal circular orbits such that each LED orbits in uniformly spaced parallel circular orbits.

Relative to claim 29 the major difference between the teaching of the prior art of record (Shimada and Sokol) and the instant invention the step of distributing is such that several panel tiles are stacked vertically inside a drum to all contribute to a whole height of the picture frame.

Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER
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